THE NAVAL SAFETY CENTER'S AVIATION MAGAZINE

approach

February 1998

The Red Baron Syndrome

The Gunny Knew He Saw Smoke

Crabbing a Hercules in a 90-Degree Crosswind

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On the cover: S-3B of VS-41.
Photo by Chris Buhlmann

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FEATURES

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FEATURES

DEPARTMENTS

You're

I discharged the fire extinguisher, but

by Lt. Paul Brotze

WE WERE INTO OUR FIFTH MONTH of the cruise, and our port visit to Trieste had recharged our batteries. We were back to flying sorties over Bosnia from Groundhog Station. My lead and I launched on a standard Case II departure, and after climbing through the overcast, I went to our briefed rendezvous point 20 miles northwest of the ship at 16,000 feet.

With lead on my radar, I was about to call, "Tied on," and expedite our transit to the tanker track, when a "deedle-deedle" got my attention. A single "X" in the far right corner of the flight-control system (FCS) page had triggered the caution. After I tried three times to reset, I told lead, and we decided to continue with the mission.

My confidence in our ability to keep going deteriorated when I then saw a HYD 1A, 1B caution. A glance at the pressure gauge confirmed that I had a problem because the HYD 1 system pressure had fallen to 1,800 psi. My left leading-edge flap and right aileron had locked as the switching valves tried to correct the disparity in pressure between the two systems.

At this point, we decided the battle group would have to fend for itself as I started an easy turn toward mom. Lead coordinated an immediate recovery as I began troubleshooting. I had recently listened to a lecture on our hydraulic system and thought, "This is right up my alley." With lead on my left wing, I reduced power on the left engine and watched the hydraulic gauge fall to 1,200 psi. If the hyd-pump shaft had sheared, pressure would be zero. If I had a leak, the reservoir-level sensing system should have

started cycling the respective circuits. Neither had occurred. I still had a 1A, 1B caution, and lead couldn't see a leak.

Tower cleared me for a visual straight-in. We were nearly overhead the ship, descending from 10,000 feet to intercept a 10-mile straight-in on the BRC. After talking with our tower rep, I tried resetting the FCS. The reset cleared the Xs for the leading-edge flap and aileron, replacing them with a failed right rudder. I was through resetting things.

When we determined I would be a candidate for an immediate recovery, my fuel state was 12,300 pounds. I started dumping so I would arrive at the ramp with a 4.3, the max-fuel weight for the trap.

I descended through the undercast with lead on my left wing, leveling off at 1,200 feet. Checking the HYD gauge again, I saw pressure on HYD 1 at 1,000 psi, and after a short discussion, we decided I should secure the left engine. No sooner had the throttle hit the stops than I heard "Betty" warning me of a fire in the left engine. I hadn't hit the fire-warning test switch, and this wasn't a simulator.

Not good. I pushed the fire-warning light as lead calmly called, "You're on fire."

I discharged the fire extinguisher, but it didn't seem to affect the flames, which were now clearly visible near the APU exhaust. At this point, we were 16 miles from the ship in a left turn to intercept the final bearing. Turning sooner would have been ideal if I didn't have 8,000 pounds of excess fuel to dump.

While I had my hands full setting up for the approach, lead coordinated the recovery. At eight miles, I decided to lower my gear.

On Fire

it didn't seem to affect the flames...

The wheels came down normally, but lead reported a steady flame burning from my left wheelwell, with an occasional burst of flame appearing every few seconds.

We coordinated an immediate egress in the landing area with tower, and the crash crews were standing by. Lead and I used the back radios to discuss dealing with the fire and setting the parking brake once I was in the landing area. We knew our mishap could easily develop into a much larger problem. We also talked about getting away from the burning jet after I secured the engine.

Paddles called, "Contact" at three miles. My Hornet flew OK at half flaps on its No. 2 engine. The flight controls worked fine, and I was at my max-trap weight as I called the ball, single-engine at three-quarters of a mile. The LSO commented that the burning paint, plastic, and composite smelled foul as I crossed the ramp.

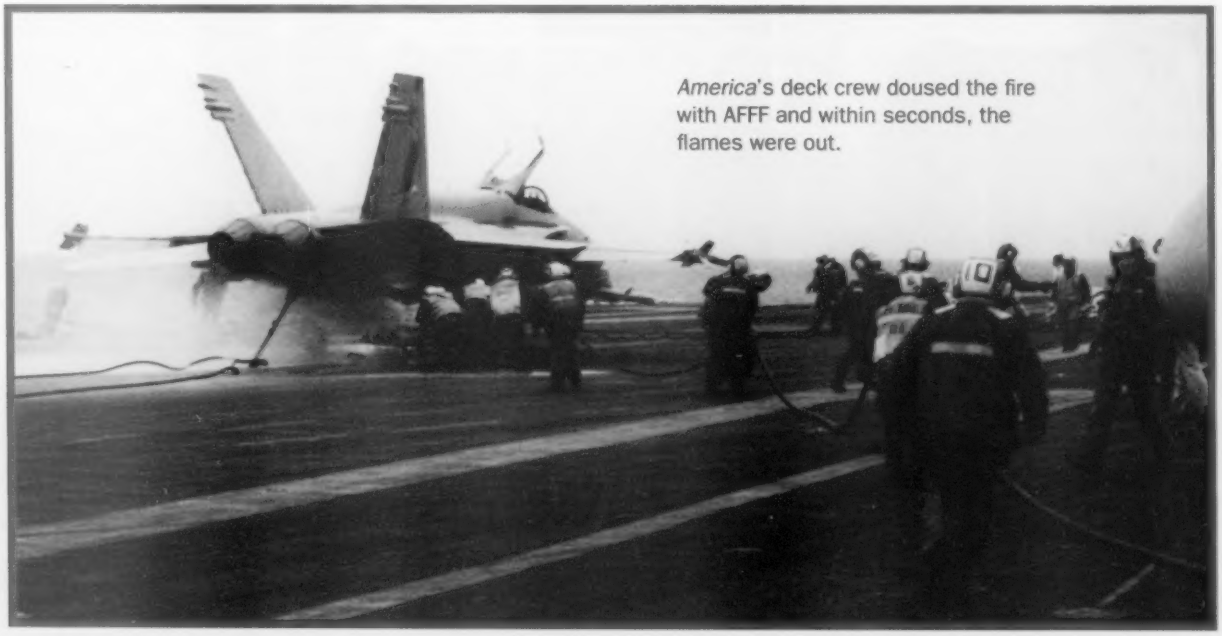
As I rolled out, I secured the right engine, set the parking brake, out of habit unlocked the wings (I realized this part only after I saw the PLAT), safed the seat, and, not wanting to wait for the ladder, jumped to the deck. The deck crew doused the fire with AFFF and within seconds, the flames were out. Thanks to *America*'s crash crew and my squadron's maintenance department, the Hornet was flying again two weeks later.

Maintenance discovered an internal failure of the hydraulic pump. The excessive heat generated in only four minutes had ignited a fire in the AMAD bay.

Lt. Brotze flies with VFA-82. His flight leader on this mission was Lt. Chris Owens.

As a result of this incident, the squadron submitted a hazard report identifying inadequacies in the FA-18 NATOPS regarding procedures for hydraulic-system failure. VFA-82 then submitted revised hydraulic-failure procedures to the NATOPS model manager, following their own hazrep recommendation. The revision was approved and inserted into the aircraft NATOPS.

BZ to Lt. Brotze for highlighting some confusing emergency procedures. And a BZ to VFA-82 for reporting the problem and actually pursuing a fix. – Capt. Jeff Jaques, CAF, Naval Safety Center FA-18 analyst.



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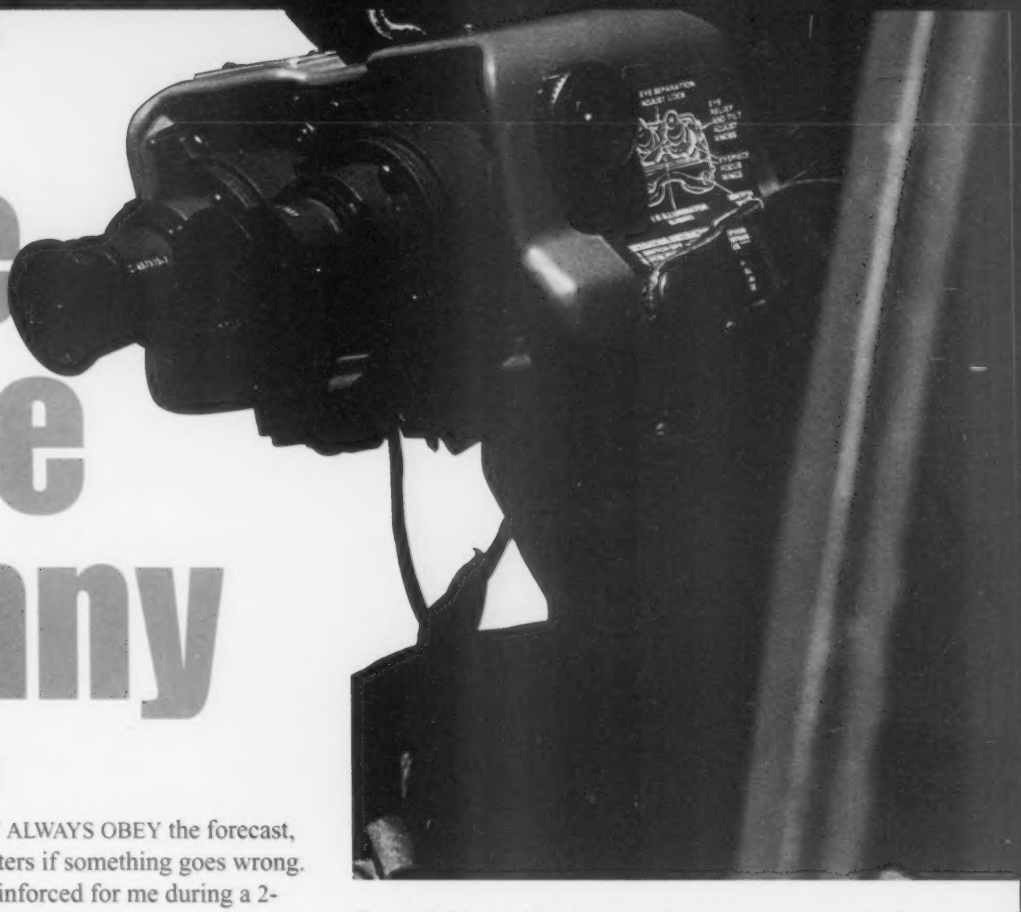
One Sure Gunny



by Maj. Joseph Strohman

THE WEATHER DOESN'T ALWAYS OBEY the forecast, which complicates matters if something goes wrong. These basic points were reinforced for me during a 2-plane, NVG-navigational flight.

With the weather getting worse, we had just decided to return to New River when our UH-1N's No. 2 engine chip-light lit up. We went through the NATOPS procedures and continued toward New River with the No. 2 engine at flight-idle. At this time, the flight was approximately 30 nm north of the station. This was the third chip light in this engine in as many days, and each time a mech pulled the chip, the problem was just "fuzz" on the detector. There were no other indications.

Flying in and out of rain, we turned on the windshield wipers, but they stopped working after only a minute. It was hard to monitor engine instruments and navigate in the rain without any windshield wipers, so we told our wingman to take the lead. After several calls, we realized our wingman had lost all communications. My crew chief and copilot monitored the bad engine, pointed out prominent navigational features, and watched our wingman.

We then discovered that our aircraft tacan had a 30-to-45-degree lockout. The wingman was finally able to get one radio working, and told us he was temporarily disoriented and his tacan also didn't work. We were slightly disoriented ourselves, and I was happy to see a prominent navigational point leading into Northeast Creek Bridge, which is a mandatory reporting point for New River.

At that moment, our crew chief reported that our wingman appeared to be trailing smoke. After we called him, our wingman replied he could not find anything wrong but was checking. I thought our crew chief had seen an optical illusion, which wasn't surprising in rapidly deteriorating weather. It was only after the gunny insisted that there was definitely something wrong with the wingman and a third challenge that our wingman reported, "Our fuel gauge is approaching zero, we are landing, fire!"

We declared an emergency to New River Tower. With a SAR aircraft en route, and a CH-53E on-station to watch over him, our wingman landed. We followed.

The smoke that our crew chief had seen coming from the other helo turned out to be fuel from a catastrophic leak. There was no fire.

Our aircraft had another case of fuzz on the chip detector, but during the penalty box ground-turn the next day, we got another engine-chip light—this time with particles. The engine and C-box had to be changed. GySgt. Gregory Staggs, our alert crew chief, received the Air Medal.

Maj. Strohman is the DSSN for HMLA-167.

Why Is This Hap

...the moment of truth arrived. Blowing down the gear

by Lt. Les Fierst

It WAS A COOL, PARTLY CLOUDY DAY in late March at NAS Whidbey Island. Spring was just around the corner and so was our April Fool's Day departure on WESTPAC 97. I hadn't finished packing for the cruise, and my mind was dreading the thought of six long months at sea.

Our squadron was in the final stages of pre-deployment FCLPs. I looked at the schedule later that afternoon and noticed that I was slated to be solo in the back seat on a day-night tanking hop to the Okanogan MOA followed by FCLPs at OLF Coupeville. I was a bit surprised, wondering how I hadn't seen that earlier.

The takeoff and transit to the refueling track were uneventful. My mind was already planning my last weekend at home with my girlfriend before leaving on the airlift to San Diego in four days. We finally arrived on the port observation position of the "Iron Maiden" KC-135. Like me, my pilot was a nugget, and he had never seen the 135 before. Ready to do battle with her, we inched forward in our Prowler. ECMO 1 gave periodic updates of cockpit systems with no abnormalities noted.

Finally, after being airborne for an hour and a half, we departed to the starboard side and took a hard turn away. At this point, our pilot noticed that the gear transition light was on and the right mainmount was barberpoled. At 20,000 feet, we stayed at altitude and headed back to Whidbey, which was about 100 nm away.

ECMO 1 opened the PCL as our pilot slowed to 190-200 KIAS with flaps at 20 degrees to get below the gear-retraction speed. We all agreed the most likely cause was our maneuvering behind the tanker's turbulent airflow. Thus, a quick switch of the isolation valve to the landing position should clear the indication.

To make things interesting, it didn't.

ppening to Me?

was our last chance at a normal configuration.

"OK," I thought, "it will surely come down when we lower the gear." Once we got within 20 nm of Whidbey, we descended to 3,000 feet and dropped the gear. Lo and behold, the right mainmount was still barberpoled. By this time, I had already called base about our condition, and one of our FCLP-mates came out to check us.

Between approach, base, our playmate, a fuel state of 4.0, and the gear problem, sensory overload was becoming a factor. The Prowler has a long checklist for unsafe indications for landing gear, with numerous notes and cautions. After hammering through all the steps to no avail, we arrived at the moment of truth. Blowing down the gear was our last chance at a normal configuration.

Our pilot slowed to 150 KIAS, rotated and pulled the handle, and… nothing. After what seemed like 30 seconds, our wingman confirmed the obvious. They were as shocked as us. In the back, I kept trying to believe this was not happening. This was supposed to be a benign flight and I should have been on my way home to pack.

Working through this emergency, we passed our bingo to McChord AFB in Seattle, so it was Whidbey or bust. On final for the short field arrestment, I was just along for the ride. We touched down, and the right wing dropped, creating a 4th of July fireworks display as the right speed brake ground away. Eventually, we came to a full stop in the gear on the muddy right side of runway 25, alive and well. I would much rather have had our plane captain welcoming us back to the line instead of the crash crew.

We had done everything by the book using sound headwork and coordination. In my short flying career, I didn't think that a gear-up landing would happen to me, especially four days before cruise.

Lt. Fierst flies with VAQ-131.

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NATOPS Check

by Capt. J.H. Pylant

WHILE ON DEPLOYMENT to Japan, our squadron got the chance to take part in Cobra Gold '97, a joint training exercise in Thailand. One mission was a 2 v 2 against RTAF F-5s. After a standard brief, my pilot and I covered a few what-ifs before walking. My pilot was relatively junior, with about 300 hours in type, and he was the wingman, albeit temporarily, for today's hop.

The takeoff was a section go, where both aircraft roll down the runway simultaneously. After running up the engines, my pilot gave the thumbs-up to the lead to start the roll. The takeoff was smooth until we tried to raise the gear.

Passing 230 knots, we noticed the "unsafe" indication had not gone out for the gear retraction. The pilot immediately retarded the throttles to stay below 250 knots, Hornet gear speed. We gave a call to throttle back to our lead, and he confirmed that our nosegear and right mainmount appeared up and locked, with our left main gear halfway up. The right main-gear doors were still open and there was fluid streaming from the right main-gear wheelwell.

I had never heard of a main retracting only halfway and knew this problem could get ugly. The only gear configuration that cannot be brought home is one mainmount hung up. In this case, NATOPS directs, "Retract all gear, if unable to retract, eject."

"Eject? This can't be happening," I thought.

We assumed the lead, requested an orbit over the field at 5,000 feet, and advised tower that we would have to take the short-field gear.

Declaring an emergency in a foreign country is an interesting experience. We had to repeat all our transmissions at least twice and some of their comm, in their excitement, was a mixture of Thai and English.

After my pilot and I broke out the blue book, we started troubleshooting. Hoping it was just an electrical problem, we checked the lights and the gear circuit breaker. Nothing.

Then we heard the dreaded "Deedle, deedle," indicating another malfunction had reared its ugly head. The caution was "HYD 2A," the most important hydraulic line in the jet, which drives many things, including gear extension and retraction.

Confident that it was not merely an electrical problem, we had no other options but to try the emergency extension of the gear using the APU accumulator. Ten seconds seemed like 10 minutes as we waited for the gear to extend. All three gear lights indicated the gear was down-and-locked. Our wingman confirmed that all gear appeared down-and-locked. Whew! We were home free now—or so we thought. The only caution that remained was HYD 2A.

As we extended downwind and descended for the visual straight-in, the "Deedle, deedle" sounded again. What next? This time the caution was "R OIL PR," indicating the right engine-oil pressure was out of limits. A quick scan of the engine panel confirmed zero oil pressure and rising EGT in the right engine.

After the pilot pulled the throttles back to idle, the caution continued, and we elected to shut down the right engine in accordance with NATOPS. Granted, we were only 10 miles from the field, but it was a VFR day, and we did not want to risk an engine fire.

We went through the single-engine landing checklist quickly since the gear was already down. We did, however, make a slight error in the procedures. NATOPS directs that all unnecessary electrical equipment be turned off to reduce the load on the one operating generator. This includes securing the radar, which has a knob that

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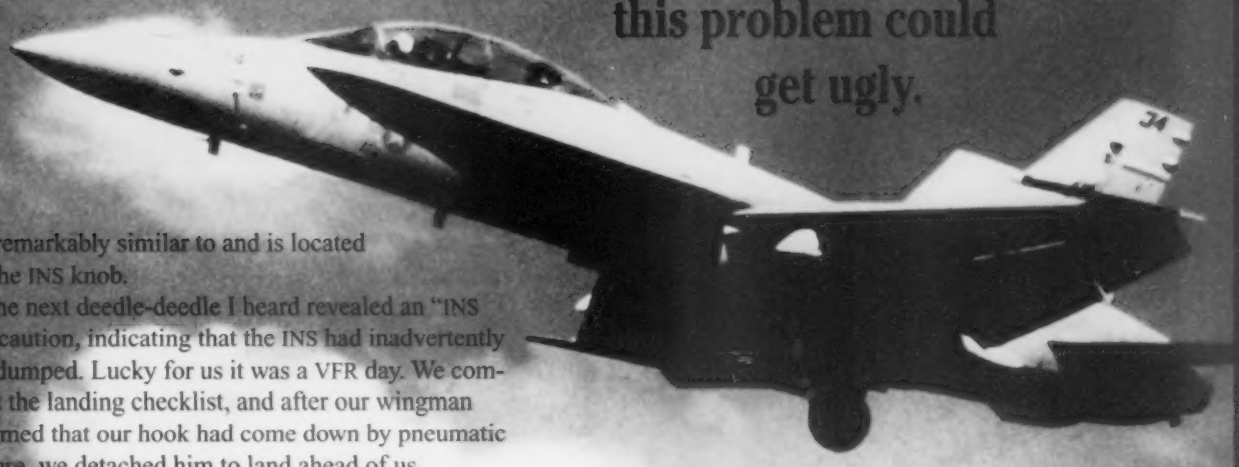

feels remarkably similar to and is located near the INS knob.

The next deedle-deedle I heard revealed an "INS ATT" caution, indicating that the INS had inadvertently been dumped. Lucky for us it was a VFR day. We completed the landing checklist, and after our wingman confirmed that our hook had come down by pneumatic pressure, we detached him to land ahead of us.

As a result of the INS dump, the HUD was useless; it indicated we were rolling 45 degrees to the right when we were straight and level. The pilot just turned the HUD brightness down and made the approach. The arrested landing was pleasantly uneventful.

During postflight, we discovered that a piece of hydraulic line had been severed in the right main wheelwell and had been bent back under the tremendous pressure of the hydraulic fluid. This accounted for the streaming fluid that our wingman saw after takeoff. An airframes rep said that aircraft vibrations were the likely cause of the hyd-line break. The FA-18D's reservoir-level sensing system correctly isolated the leaking hydraulic line and thus, the HYD 2A caution remained with us throughout the flight.

The oil-pressure caution turned out to be nothing more than an electrical problem with the sensors. No oil-pressure malfunction codes were recorded on shutdown, and maintainers could not duplicate the gripe on the deck. We probably had good oil pressure the whole time, but we had to trust our instruments, and we rightfully elected to shut down the engine.

One of the beauties of the FA-18D is that two heads can be better than one in an emergency. The pilot and I used good crew coordination to handle an array of emergencies. And if there is one learning point here, it is this: If you think you know NATOPS inside and out, you probably don't. Take a break from tactics occasionally and read some of it.

Capt. Pylant flies with VMFA(AW)-242.

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Flying Wit

"Watch this,"

by Lt. Stephen E. Banta

After a week of aggravating simulators, I was ready to leave Pensacola far behind for a good-deal weekend in Miami. I had never flown with the instructor for this VFR cross-country, but he seemed perfect for the trip. He was easygoing, famous for his laid-back demeanor, and a Santa Claus with grades. He told me to just read the chart, get us there without any flight violations, and he would show me what flying in the real Navy would be like. Sounded good to me.

The flight to the Coast Guard air station at Opa Locka went fine. VFR navigation along the Gulf Coast wasn't too challenging, and I kept us out of the restricted areas by talking to the right people at the right time.

My instructor in the back seat regaled me with stories from his days in a P-3 squadron. He was glad to be out of Jacksonville and flying something a little sportier.

"Besides," he said, "I'm getting out in seven months, and I wanted to get some more seat-of-the-pants flying before I left."

He had just qualified as an aero instructor and was looking forward to seeing what the T-34C could really do.

Peter Mersky
color by Laurinda Minke

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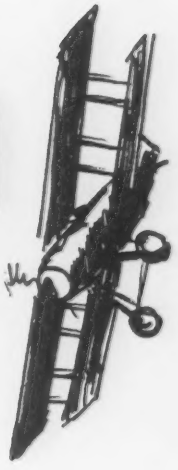
My instructor in the back seat regaled me with stories from his days in a P-3 squadron. He was glad to be out of Jacksonville and flying something a little sportier.

"Besides," he said, "I'm getting out in seven months, and I wanted to get some more seat-of-the-pants flying before I left."

He had just qualified as an aero instructor and was looking forward to seeing what the T-34C could really do.

th the Red Baron

' he said. "Guns, guns, guns!"



We had a nice time in Miami, and as we briefed for the return flight, we knew neither one of us was anxious to get back. We got a southerly heading to clear inbound traffic, then departure released us to the west.

We turned, and I picked up a small single-engine civil aircraft at our 3 o'clock heading north. It was above us and several miles away, so I called, "No factor." My instructor decided to continue our right turn through my recommended heading and added a little power to bump us up to 140 KIAS. Now we were almost directly behind the Cessna, with him above our horizon. I called traffic at 12 o'clock high.

"Roger," my instructor replied, "I've got him."

What happened next was one of those experiences you don't forget. My instructor felt like doing his Red Baron impersonation.

"Watch this," he said. "Guns, guns, guns!"

Being directly behind the unsuspecting target, I had no indication of closure rate. The view from the back seat was no better, and at our 60-knot closure rate, things happened fast.

Before I could say anything, the Cessna filled my windscreen. My left hand hit the glare shield to brace for the collision, and somehow, my right hand got behind the stick to push the nose down. I knew I couldn't turn to avoid the other aircraft, or we would collide.

The Cessna's left mainmount passed directly over my head, so close I could have touched it, and I heard the drone of its engine over our own. As the instructor pulled the power back almost to idle, his PCL floated over my right shoulder and landed at my feet. I don't think the civil pilot ever saw us, but I'll never forget wondering who he was and what could have happened.

Every member of a crew has the authority and responsibility to make a call on the safety of a particular flight. Perhaps my instructor's vast real-world experience intimidated me.

Although the aircraft commander may have more hours or experience than you, once you climb into an aircraft, you have an equal voice in everything concerned with the flight.

Lt. Banta flies with HSL-44.

AE1(AW) Joseph Ondarza
Lt Steven Knight
VAdm. Brent Bennitt
AE2(AW) John Mautner

HC-11

BZs require an endorsement from the nominating squadron's CO and the appropriate CAG, wing commander or MAG commander. In the case of helo dets, the CO of the ship will suffice. A squadron zapper and a 5-by-7-inch photo of the entire crew should accompany the BZ nomination. Please include a squadron telephone number so we can call with questions.

The crew of Sideflare 64 was on a night familiarization flight over the southern California mountains when they experienced a massive hydraulic leak and fire. VAdm. Bennitt, COMNAVAIRPAC, was flying copilot and was at the controls when AE2 Mautner reported flames coming from a hydraulic line directly in front of the 250-gallon auxiliary fuel tank. VAdm. Bennitt passed control to Lt. Knight (HAC) and began backing up Lt. Knight with NATOPS procedures, and altitude and airspeed calls.

While the HAC and copilot went through emergency procedures, AE2 Mautner and AE1 Ondarza fought the fire with the hand-held fire extinguisher. Although they were successful in putting out the fire, they still faced a 1,500-psi stream of hydraulic fluid shooting across the main cabin at shoulder height.

After finishing NATOPS procedures, the crew focused on finding a landing area. They were over unfamiliar, unlighted, sparsely populated, mountainous terrain. AE2 Mautner put on his night-vision goggles and saw a dry riverbed near the town of Jacumba on the U.S.-Mexico border. He guided Lt. Knight toward the site.

The CH-46 transitioned to the landing profile over the dry riverbed and entered ground effect. The crew had to cope with a brown-out because of the sand whipped up by the rotor wash. They decided to continue with the landing. After touchdown, they made a no-APU shutdown to prevent the possibility of another fire.

Inspection revealed that an electrical wire to the formation lights had chafed against a 1,500-psi hydraulic line to the flight-boost's No. 1 system, wearing off the wire's insulation. When the exposed wire touched the hydraulic line, the 28-volt AC line burned a hole through the hydraulic line, and started the leak and fire.

LCdr. Greg Gilmour
AW2 Jeffrey Fitzsimons
Lt. Todd Bahlau

HSL-46

Shortly after launching from USS *Ticonderoga* (CG 47) the crew of Cutlass 465 noticed fluctuations in torque, Ng and TGT. LCdr. Gilmour (HAC) and Lt. Bahlau (copilot) diagnosed the problem as a low-side failure of the No. 1 engine. Lt. Bahlau stabilized the SH-60B at 500 feet and began going through NATOPS procedures.

To regain power in the No. 1 engine, LCdr. Gilmour advanced the No. 1 PCL to the ECU-lockout position. As he did so, the No. 2 engine rolled back. The No. 1 engine did not respond, and Nr began to decay rapidly.

Lt. Bahlau lowered the collective to regain Nr and prepare for autorotation. LCdr. Gilmour immediately moved the No.1 PCL to idle to clear the lockout. The No. 2 engine then returned to normal operation as Lt. Bahlau recovered at 150 feet.

With a highly suspect engine-electrical system, the crew returned to the TICO single-engine. AW2 Fitzsimons (SENSO) handled communications with the ship. Lt. Bahlau flew a single-engine approach to a no-hover landing.

Troubleshooters found various wiring harnesses, hydromechanical units and electrical-control units that required replacement.

Ens. Matthew Duffy
Capt. J.J. Isherwood

VT-10

Capt. Isherwood (IP) and Ens. Duffy (SNFO) were on a familiarization flight in their T-34C. As Ens. Duffy lowered the landing gear in preparation for an approach-turn stall, the crew heard a thump. They saw an unsafe nosegear indication; the mainmounts were down-and-locked.

Capt. Isherwood took control and told Ens. Duffy to open his PCL to the procedures for unsafe-landing-gear indications below 150 KIAS. The IP tried several times to move the nosegear but couldn't. The crew of another T-34 in the area made a visual inspection and reported that the nosegear was extended at 45 degrees aft of down and locked.

Capt. Isherwood called base for information and backup. He tried swinging the nosegear down by using positive and negative G's to no avail. A maintenance rep recommended not trying to recycle the gear, because that might cause more problems.

Capt. Isherwood decided to land in the existing configuration. He made two practice approaches to runway 25R at NAS Pensacola. On short final on the third approach, he secured the engine with the condition lever while Ens. Duffy pulled the emergency fuel-shutoff handle, feathering the propeller.

The trainer touched down on its mainmounts, and Capt. Isherwood held the nose off the runway until he ran out of elevator authority at approximately 50 to 60 KIAS. As the nose lowered, the nosegear collapsed, and the aircraft slid for 800 feet before stopping slightly right of runway centerline.

As a precaution, emergency crews sprayed foam on the nose as the aircrew got out of their aircraft.

A postflight inspection revealed that the linkage between the nosegear V-brace and forward retract arm had broken, resulting in a free-swinging condition of the nosegear, which prevented the nosegear from extending or retracting. This condition could have resulted in incomplete mainmount retraction if the crew had tried to recycle the gear.

Cpl. Clinton Smith
Sgt. John Kaiser
Capt. Michael Villar
Capt. Brent Davis

HMH-466

Wolfpack 23 was on a ferry flight to NADEP, MCAS Cherry Point when Capt. Villar (HAC) saw his No. 2 torque gauge drop to 0, while all the other dials read normal. Shortly thereafter, the No. 2 engine's Ng decreased, T5 rapidly climbed to 1,000 degrees, and fuel flow indicated 500 pph.

Capt. Davis (copilot) moved the No. 2 speed-control lever toward shutoff as the fuel boost and bypass lights came on. Simultaneously, Cpl. Smith (crew chief) and Sgt. Kaiser (observer) noticed smoke in the cabin. Capt. Davis secured the No. 2 engine as Capt. Villar looked for a place to land. After telling ATC about the situation, the HAC made a precautionary dual-engine emergency landing in a farmer's field.

Postflight inspection revealed the No. 2 electrical-wiring harness had caught fire. The cause of the fire is under investigation. Initial examination by NADEP indicated that the possible cause might be a compressor stall. The engine cowlings were also scorched and delaminated from heat in the engine compartment.

Tree!

by Maj. Peyton DeHart

NIGHT-VISION GOGGLES (NVGs) are great pieces of gear. They let us fly low when it is too dark to see without them. To counter some of the anxiety of flying when there isn't enough light, the training syllabus is conducted in a stair-step fashion. We first use NVGs in high ambient light, eventually working down to mere starlight.

At 29 Palms, I was Dash 2 on an NVG navigation hop. The territory was reasonably familiar; we had flown over it the day before. But the challenge was to find specific points on a route. Long-range vision was nil, revealing only the silhouette of the local mountain tops. The terrain in between was obscured until we were on top of it.

Flying at a couple of hundred feet AGL, I was in the back seat of the Cobra, eyes glued to the lead aircraft. To glance away would be to lose the subtle cues of relative motion. The result would be that lead would drift away, out of sight, or we would close up, perhaps setting ourselves up for a midair. The guy in the front seat had the map and was backing up lead's navigation. After crossing an absolutely flat dry lake bed, we

I knew there were no trees anywhere near that area...

moved to an area of gently rolling terrain. With the aircraft shrouded in darkness, humming along with a lulling drone, I had settled in and was feeling comfortable when my copilot broke the reverie of the moment by screaming one word: "Tree!"

I knew there were no trees anywhere near that area, but since he said the word three octaves higher than his normally droll delivery, I was greatly alarmed. The fact that he said "tree" rather than "rock" or "hill," told me that he was startled, and that we were in imminent danger of running into something.

Climbing was the obvious solution. But when? His octave shift meant that it was close. Calling whatever it was a "tree" meant that his brain knew it needed to say something, even if it misidentified the object. That meant the object was really close.

I yanked back on the stick and pulled all the power that General Electric had built into the engines. The edge of a long plateau whizzed by 10 feet below the skids as we climbed for the stars. We'd have smacked it about 50 feet below the ridgeline but for his call.

Maj. DeHart flies with HMLA-773.

This Check Little Too Rea

...it was indicating left-outboard flap at 20 degrees

by Lt. Gareth Rietz

0500 HOURS CST. Most people were still tucked in their beds. As I rounded the last curve toward work, I could see the squadron was already buzzing with activity. Our E-6A was being prepped for the first event of the day.

As the instructor pilot (IP), I had a busy flight ahead of me: six scheduled events including three check rides, aerial refueling, and an intermediate stop at Offutt AFB to pick up our CO, who had been attending a conference, before returning to home base a mere 11 hours later.

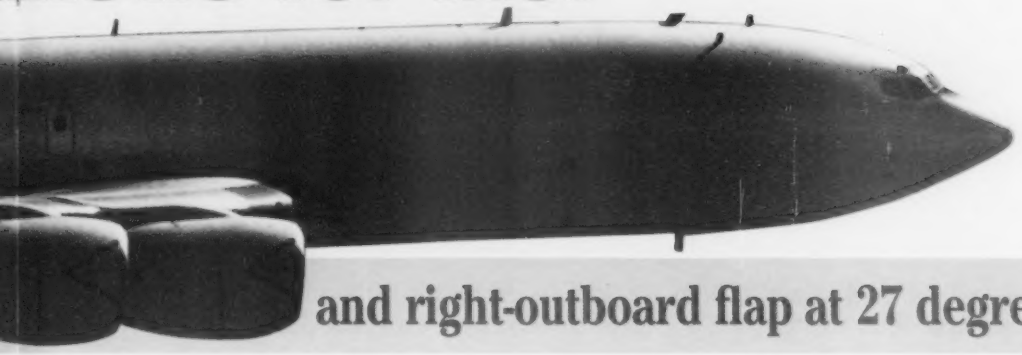
After briefing the day's plan of attack with the pilots and the navigator, my first engineer told me the jet was down for a bad fire-warning test on No. 3 engine. Four hours later, after several calls to metro, base operations and my command center, we were ready for checklists. It took all 96,000 pounds of thrust and some creative ATC handling to get us to the tanker rendezvous point only 10 minutes from our scheduled time. The refueling was uneventful, and so was the approach and landing at our intermediate stop. We put on 45K of fuel and saddled up again for the RTB.

En route, I gave the copilot some simulated system degradations, and we set up for the first approach and possible landing into home field. I say "possible" because the E-6 is limited to 250K for normal landings, and we were still too heavy from the ground refueling. We briefed the first scenario as a low approach only because of our excessive weight. We took vectors for the ILS. We had lowered the flaps all the way for the approach, and checked everything before tower cleared us for the low approach.

Like other multiplace crews, we use the challenge-and-response method for doing checklists, and I always encourage anyone on the flight deck to speak up if we miss something, or if something just doesn't look right. With more than 3,000 hours of flight time, including 2,000 hours in the E-6, I am still not too proud to ask someone for sanity checks.

So I heated things up a little on the second pass. The copilot had 4,000 hours and was getting his annual aircraft-commander check. I simulated a bird strike on the left side, which caused a simulated compressor stall in the No. 1 engine and a fire in the No. 2 engine that wouldn't go out. It was hectic for him, and I was occupied with making sure the

k Ride Is a alistic for Me!



and right-outboard flap at 27 degrees.

aircraft was flying, coordinating tower clearance and running checklists.

As the acting aircraft commander prepared for the emergency return and the engineers scrambled for the checklists and data required, we called tower for a turn to base. As we lowered the flaps and gear, the first engineer said, "Hey, sir, training timeout." An unusual request from a crew member who isn't being evaluated, but I was not about to ask for a detailed explanation while I was flying a 250,000-pound airplane at 170 knots, 1,000 feet off the ground.

The first engineer said, "Did you split the flaps like that?" I looked at the outboard-flap gauge, and it was indicating left-outboard flap at 20 degrees and right-outboard flap at 27 degrees. I replied that although I liked the scenarios realistic, this was a little too much, even for me.

I called for a go-around, and we left the flaps and the gear where they were. NATOPS says to return the flap lever (the flap causing the asymmetry) to the nearest detent. I had just finished refresher training in the simulator the week before and had questioned this very procedure. I grew up flying C-130s, and was taught not to reverse the direction of the flaps unless it was causing a control problem. In this case, it wasn't, or I would have noticed the flap problem before the engineer. The copilot, also Herk-trained, agreed.

I told the crew that I'd decided to leave the gear down because I knew we were still too heavy to land with asymmetric flaps, and this would help us burn off some of our excess fuel.

We were vectored out to holding to get our crew focused on the problem. At this point, I ensured the copilot was aware of our holding instructions and told the navigator (the CO) to back up the copilot and to listen for traffic and ATC calls. I then turned my attention to the checklist procedures and the engineers.

I called over the PA and asked the pilots in the back to look out the overwing escape-hatch windows to see if they noticed any asymmetry in the outboard flaps. I was very lucky to have senior pilots on board—three prior IPs and a guy on his aircraft commander precheck flight. They confirmed what the gauges read: the right outboard flaps appeared to extend a little farther than the left.

The engineers and I formulated a plan, and I asked if there were any other suggestions before we requested vectors to land. One of the IPs asked why I hadn't put the flaps to 20 like the checklist called for. I explained my thoughts about not wanting to reverse them if it wasn't necessary.

We discussed checking controllability but deemed it unnecessary since we had plenty of trim and power available and the go-around had been uneventful. I said that we would lower the inboards to full down and slow to approach speed; then, if the copilot noticed any rolling tendency, we would go around and rethink things. With everyone clear on the procedures, we called for vectors and landed.

The navigator backed us up with DME and timing calls, and the engineer ran the checklists. The copilot flew a nice approach, which allowed me to think of the other hundred things most aircraft commanders have to consider before landing.

On postflight, we left the flaps where they were so that maintenance could see what had happened. Checking the port wheelwell, we found that the outboard-flap's torque tube was uncoupled from its shaft. Only one screw was holding it. I am glad that I was on the ground looking at it instead of up in the air flying it!

What would have happened if I had moved the flap lever any more as NATOPS suggested?

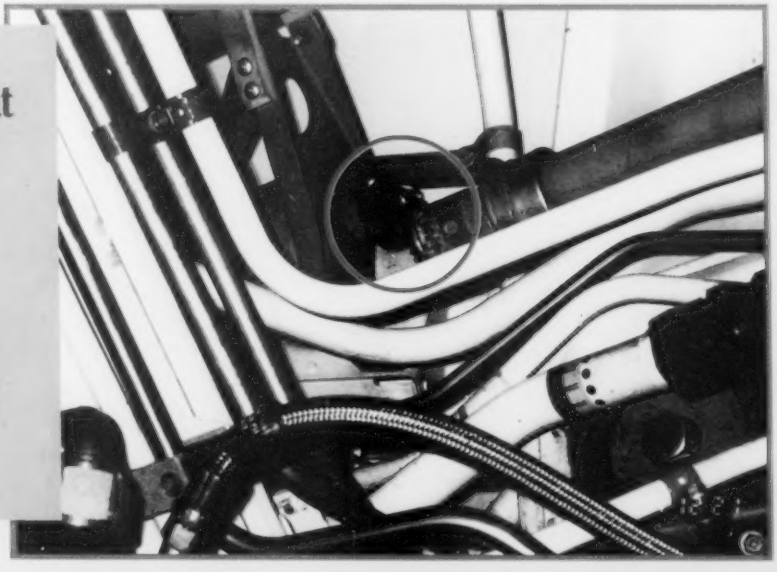
The aircraft discrepancy book revealed that the flaps had been re-rigged 10 days earlier, and that a functional test had been made. The plane had flown four times before our incident, including once by me. Apparently, no one had put any safety wire on the screws, and they finally backed themselves out after several cycles of the flaps. No one was hurt, and to my knowledge, there was no significant damage.

In retrospect, I should have perhaps declared an emergency. But I discussed this with the flight deck and decided it would only cause confusion. I had plenty of alternate fields that I could have reached, and the weather was CAVU.

Reviewing the events in my head after I got home, I was grateful that with all the experienced people in the plane, I didn't have everyone telling me what they thought I should do. I followed NATOPS and deviated where I found it necessary, using sound judgement and good ORM as my sanity checks.

Lt. Rietz flies with VQ-4

...we found that the outboard-flap's torque tube was uncoupled from its shaft. Only one screw was holding it.



Mowing Grass

by Maj. Stephen M. Breen

We LAUNCHED FROM MCAS NEW RIVER for the two-hour flight to Quantico where we would support the basic school on a live-fire exercise. I was in Dash 2 of the two-plane section. Both Hueys had lieutenants fresh from the FRS as copilots. Frequently glancing at the map to back up lead on navigation, I found that "keeping up and shutting up" was an understatement. About 45 minutes into the flight, the caution light for the No. 1 oil pressure interrupted the jovial banter in our cockpit.

I took the controls as my copilot grabbed the pocket checklist. The crew chief looked for oil on the left side of the fuselage, but the low reading from the No. 1 oil-pressure gauge confirmed the fate of the No. 1 engine.

Maintaining 500 feet, we decelerated to bucket airspeed and secured the No. 1 engine. After cleaning up the cockpit and ensuring the remaining engine had enough power to keep us airborne, I radioed lead to report our situation. We decided he would lead us to the nearest airport. My aircraft weight was still close to max gross because of the ordnance we needed for the mission. This condition resulted in a very small power margin for single-engine flight. We considered jettisoning some of our ordnance to increase the power margin, but we were maintaining level flight so we put the idea on the back burner.

The crew coordination in our cockpit was good, but we were anxious to land. It had been 15 minutes, but it felt more like an hour by the time lead found a divert airfield.

I told lead that my aircraft was UHF-only and that he needed to clear my aircraft to land on his VHF radio. I was a half-mile in trail when he radioed we had clearance to land and that he was on short final for a helo pad. I expected a brief on winds, traffic and a suitable place to land, but I heard nothing.

As I approached the airport, I requested the information, which surprised lead. He gave me the winds and said I could land at the helo pad next to him. I realized then that he did not grasp the severity of my situation. To paraphrase Dean Wormer in the film "Animal House," single-engine and close to max gross weight in a Huey "is no way to go through life," let alone shoot a no-hover landing near another aircraft.

I could see myself tap dancing in front of the FFPB now. I opted for curtain number 2, which was a slide-on landing in a grassy area behind the helo pads. I told lead of my intentions as I descended and decelerated. At 25 feet, the low-rotor rpm warning horn sounded as Nr decreased through 97 percent, which reinforced my decision not to do a no-hover landing.

Maintaining translational lift with the collective high in my armpit, we rode the Huey down. The grass was long, uncut, and fortunately for us, level. As we cut through the grass like a runaway lawn mower, I decided this was not my best slide-on landing, but it was definitely my longest.

After we stopped and shut down, the crew chief found our problem — a cracked T-fitting on an oil line, which had drained the oil from the No. 1 engine.

This incident taught me that I needed to be more assertive with lead. I should have told him what I needed rather than assuming he would figure it out.

Second, I should have used the runway rather than making a slide-on landing to an area we didn't know to be level. When practicing simulated single-engine failures at home field, we routinely use the grass next to the runway for slide-ons instead of the runway itself to save wear and tear on the aircraft's skid shoes. I was fortunate the grass was level, and there was no damage.

Maj. Breen is the DOSS for MAG 42 Det C. At the time of this story, he was assigned to HMLA-167.

...we knew that if we didn't get gas we would

What Simple Flight?

by Lt. Denis Tri

I HAD JUST FINISHED FRS TRAINING and SERE school with orders to join my fleet squadron on cruise near Japan. With four flights under my belt for the deployment, I wanted some routine flights, not one where I'd be preparing to eject. Yet, that's what happened.

I was scheduled to fly with the operations officer for some day bombing, our mission to drop blue death on a spar and shoot bullets. It sounded so simple in the brief: find the small boy towing the spar, set up a pattern to drop a few bombs, strafe, and RTB.

The start-up and takeoff were routine except for the cat shot, where we lost our INS and could not bring it back. Because I had just joined the squadron, I had not received my hand-held GPS, but all we really needed was a tacan. We didn't plan on going far, and besides, we had a wingman.

On the way to the spar, our tacan was intermittent. We completed the bombing and strafing with accurate hits. The weather was getting foggy. As we headed back to the ship, the weather continued to get worse, requiring a Case III recovery. We were proceeding to marshal when our tacan went out completely. Our section marshaled together until we were receiving ILS. We were sure things would not get worse.

The first pilot was called down from marshal to start his approach. The fog bank over the ship was very thick now. We had to remind the controller we had no tacan, and we needed special handling. We reached our push time and started the approach.

The first plane down was already on the ball and reported, "Clara." The LSO's response was, "Roger, keep it coming and call the ball when you see it."

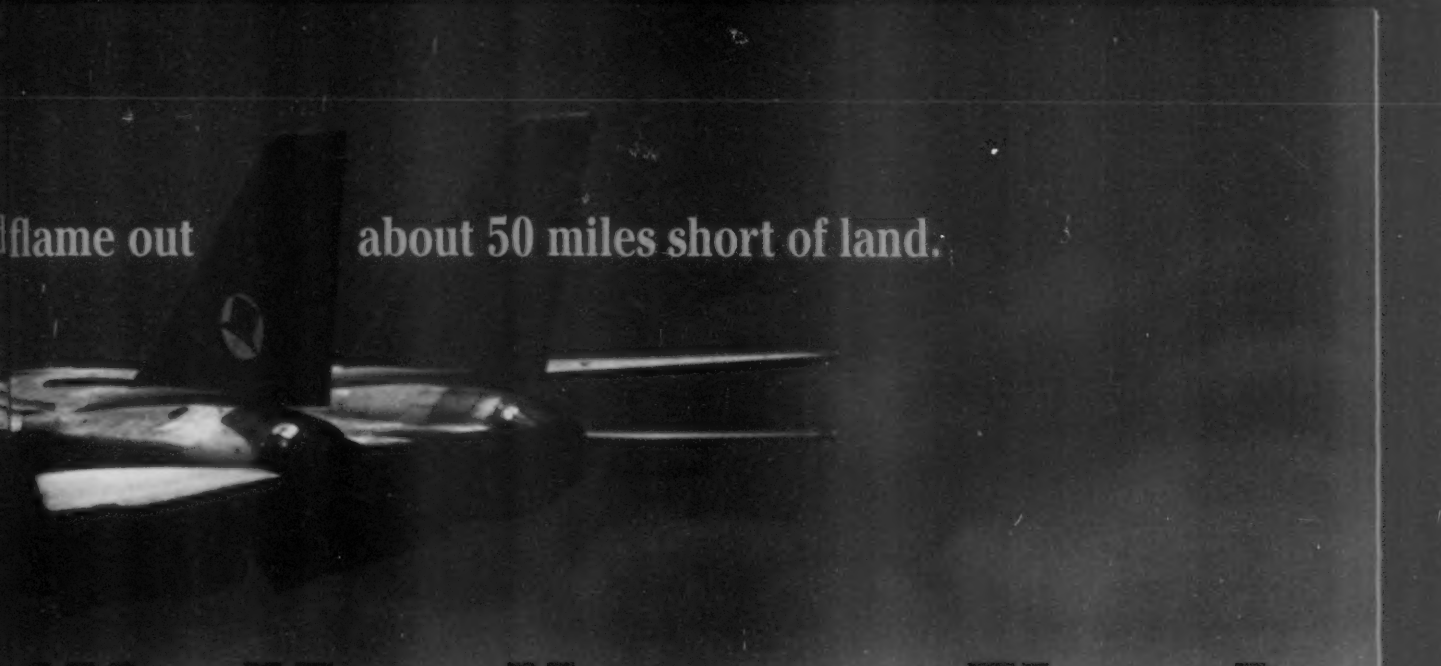
The last thing I heard from the LSOs was, "Power, power, power! Wave off, wave off!" It sounded like they had just about smacked the rounddown. Now we were in for it — vectors and popeye.

I could not help thinking, "Where the hell is the ship?" After an eternity of this driving around, we were down to less than 4,000 pounds of gas.

I called the ship. "Approach, 200 needs a vector to the tanker." No answer.

"Strike, 200 needs a vector to the tanker or our wingman." No answer. Every call we made went unanswered.

The ship finally made the call, "Ninety-nine, divert."



We May Have to Eject!

Now what? Land was more than 170 miles away. We had no INS, no tacan, no wingman, we were in the fog, and we didn't have enough gas to make it to the divert. We needed to find our wingman or a tanker immediately.

A dozen more calls to strike for a vector or to our wingman went unanswered. An eternity later we got a vector, found our wingman and started for the beach. There was a diverting tanker we could hit en route.

The ship launched the alert tanker, but if we turned back and it was sour, then we definitely would not have the gas to make it to land. Checking the bingo charts, we knew that if we didn't get gas we would flame out about 50 miles short of land.

We found the tanker on the way to shore. As the low-state bird in our flight, we took on 2,000 pounds, while our wingman was forced to take a little less. Our wing didn't feel they had gotten enough gas, but with the alert tanker 30 miles in trail, they could not afford to turn back.

We got our gas, climbed and proceeded on our bingo profile. We still had a long way to go. At 110 miles, our wingman had a tacan lock on the field. At 36 miles, they got low-fuel lights. As our low-fuel lights started to flicker, I saw islands below us.

I felt relieved to know that if we ejected we could at least swim to these islands, and we would not be swimming in the middle of nowhere. They even looked like good places to fish.

It was time to put away the kneeboard. I tightened my straps, started stowing gear and reviewed the proper ejection position.

With vectors to a final course 15 miles out, our low-fuel lights were on steady. The field appeared through the clouds. We split the section for straight-ins. There would not be enough gas for a second time around. Our wingman later confessed that he was being especially careful to keep the wings level, hoping to avoid flaming out.

We touched down well below our SOP fuel. Seeing the runway that day was as exhilarating as any moment I have experienced in the Tomcat.

A routine bombing hop had changed to a flight that had us considering ejecting and losing two jets. A couple of solid decisions saved our aircraft that day. I will not take the navigation instruments for granted again. Erratic instruments and bad weather can take everything away from you.

Lt. Tri flew with VF-211. He is now at TPS.

Someone Reboot the

by LCdr. Tom O'Neill

THE UPDATE FROM THE CONTROLLER was not encouraging.

"Willy Field is reporting WOX zero miles visibility in snow and blowing snow. Winds three-fifty at thirty, gusts to thirty-five. Skiway Seventeen in use. Say your intentions."

We were at 100 DME, FL270, with 10,000 pounds of JP-8 in the tanks… and nowhere else to go. As a 3P on my first deployment to Antarctica, this was the first time I would see the infamous weather that generated such great respect from the experienced flyers in the squadron.

After departing the South Pole two-and-half hours earlier, we had gotten caught when the unpredictable weather changed in 30 minutes from a cold, clear-and-a-million day to the treacherous, howling blizzard that Antarcticans affectionately call a "herbie."

The aircraft commander on my crew was a lieutenant commander with almost 5,000 hours in multi-engine turboprops. Twice an FRS instructor in P-3s, he was confident (and unfortunately arrogant) about his ability to fly. He had more flight time than any pilot in the squadron and was in the last year of his 28-year career. He was also my department head.

The other pilot was also a 3P, another O-4, with more than 2,000 hours and a tour as a P-3 instructor. They had been in another squadron together and hated each other. The AC frequently criticized the second man in front of the crew, creating an uncomfortable atmosphere whenever they flew together. So, for this afternoon, the AC replaced him in the right seat with me and my whopping 350 hours.

We briefed the PAR approach, the only precision-approach available, and started down. We didn't brief the possibility of not getting into the field, nor our limited options if we couldn't get in. The AC, confident in his abilities, wasn't even concerned that we might not be able to land.

As we began the approach, the controller told us visibility was between 0 and 1/8 of a mile. The AC established us on the glideslope, and after several big corrections for a huge crosswind, had us tracking down the centerline. Decision height for the approach was 100 feet and, as we descended, I moved my scan from inside to outside to locate the field. I knew we had a large crab in because

We hit the ground at an outrageous rate of descent, th

Aircraft Commander!

of the winds, but I underestimated how big a crab it was.

At approximately 200 feet, the engineer called the approach lights in sight through the pilot's side window. I was looking through the windscreen and would have never seen the field.

I called out 100 feet above decision height as the pilot said, "Yeah, I got it," and made his play for the skiway.

Everything next seemed to happen in slow motion, although it was over in seconds. The rate of descent fell through the floor, as the pilot took the crab out too quickly in his rush to align the aircraft with the skiway. I screamed, "Waveoff!" The engineer screamed, "Go around!" The AC locked up like a faulty computer.

We hit the ground at an outrageous rate of descent, the main skis destroying the approach-light trestles at 250 and 200 feet. We bounced and landed again somewhere at the approach end of the skiway. The AC needed a complete reboot.

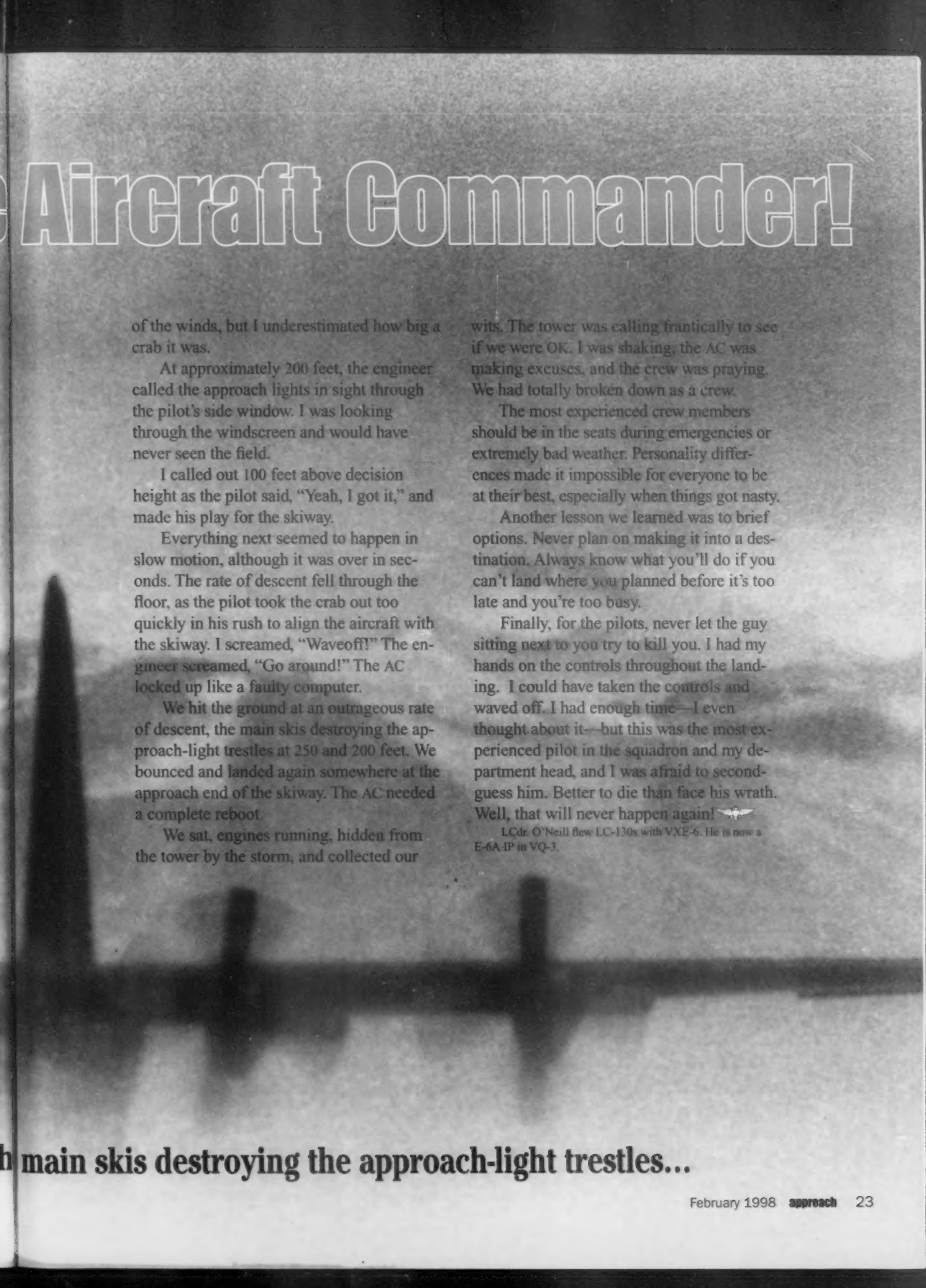
We sat, engines running, hidden from the tower by the storm, and collected our wits. The tower was calling frantically to see if we were OK. I was shaking, the AC was making excuses, and the crew was praying. We had totally broken down as a crew.

The most experienced crew members should be in the seats during emergencies or extremely bad weather. Personality differences made it impossible for everyone to be at their best, especially when things got nasty.

Another lesson we learned was to brief options. Never plan on making it into a destination. Always know what you'll do if you can't land where you planned before it's too late and you're too busy.

Finally, for the pilots, never let the guy sitting next to you try to kill you. I had my hands on the controls throughout the landing. I could have taken the controls and waved off. I had enough time—I even thought about it—but this was the most experienced pilot in the squadron and my department head, and I was afraid to second-guess him. Better to die than face his wrath. Well, that will never happen again!

LCdr. O'Neill flew LC-130s with VXE-6. He is now a E-6A IP in VQ-3.



h main skis destroying the approach-light trestles...

We've G

...we posted
We declared an emergency, turne

by Lt. Pete Garvin

I HAD BEEN A PATROL-plane commander for more than eight months, and we were scheduled on a nine-hour, anti-surface-OTHT flight from NAS Jacksonville in support of battle-group ops off the coast of Virginia. Reading the aircraft discrepancy book, I noted continuing, mysterious problems such as spurious fire warnings and unexplained fumes on the No. 3 engine (its efficiency rating was 97.9 percent). Having flown this plane before, I realized that the engine-driven compressor (EDC) on that engine had recently been changed. Forewarned is forearmed, or so I thought.

During preflight, we discovered several problems in the tube, including a bad radar. With the mission and forecast of poor weather on-station, fixing the radar became a priority. Two hours and several gripes later, we finally had a mission-capable aircraft. Takeoff would be 15 minutes late.

The flight started with me in the left seat and the copilot in the right seat. On the takeoff roll, the No. 3 engine just made the 80-knot power-airspeed minimum. We rotated at 1615 with 53,400 pounds on the fuel totalizer and climbed to our filed altitude of FL190.

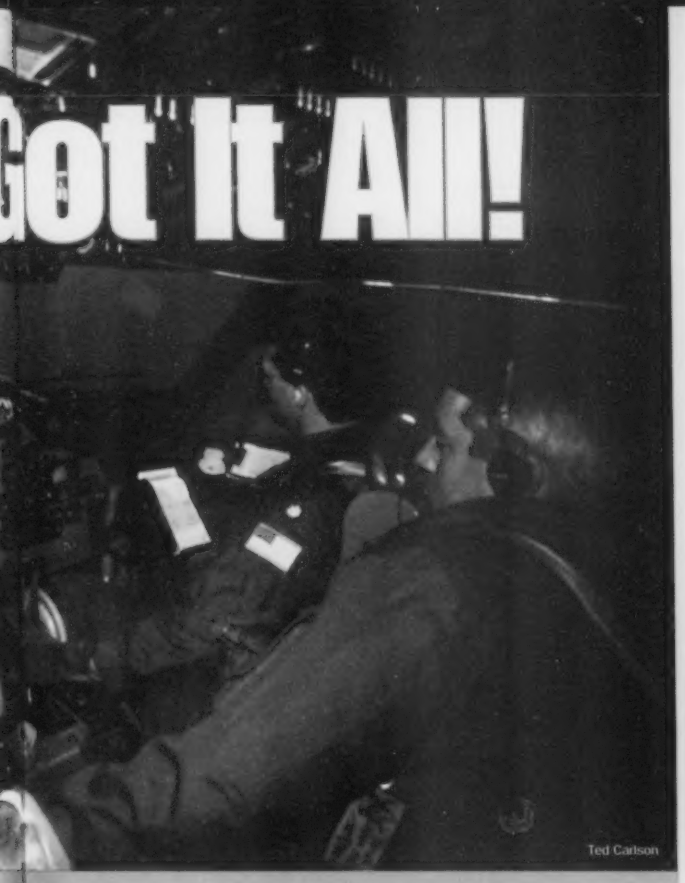
The climbout and turn toward Charleston appeared normal. In-flight operational checks of the aircraft continued, with radar reporting heavy weather over land in southern Georgia. We checked our route for other weather problems.

At approximately 1635, while climbing through 16,500 feet, the flight engineer called out, "Engine-driven compressor press-low light number three."

After discussing the problem, we disconnected then dumped the EDC from the engine in accordance with NATOPS. We requested and received a level-off at 17,000 feet to see if the No. 2 EDC could maintain pressurization. As we leveled, the radar operator reported his scope was down, which just about canceled our weather-avoidance effort.

With the No. 2 EDC holding pressurization well at a cabin altitude of 4,200 feet, we elected to climb to reach VMC on top.

Got It All!



Ted Carlson

d fire watch.
ed for home and asked for FL200.

We got clearance to FL230, where the conditions were reported as CAVU.

Because the aircraft was slightly on the heavy side for that altitude, normal rated power was necessary to maintain a reasonable rate of climb. With the aircraft at 22,500 feet and 200 knots, the fire-warning horn and light went off for the No. 3 engine. I took the controls, directed the No. 3 emergency shutdown handle pulled and HRD discharged, and started through the emergency shutdown checklist. The horn and light went out when we pulled the E-handle. There were no secondary indications of fire, and we posted a fire watch.

We declared an emergency, turned for home and asked for FL200. We were cleared as requested, and we asked center for the weather at our closest divert, MCAS Beaufort. Center reported what was obviously hours-old information. CAVU didn't seem right, considering what our radar had shown before going down. The third pilot searched through the pubs and got metro frequencies for all the available diverts. We called Beaufort directly, and they told us the weather all over that part of the coast was obscured, with tornado and severe thunderstorm warnings everywhere. The gloomy weather reports were the same all the way to Jacksonville, so we decided to press farther south.

With the situation somewhat stabilized, we adjusted our gross weight to reduce landing weight and speed. After telling center we would be turning off the radios, we began dumping fuel. We had a decent ride at FL200 with no buffeting or rain, but it was hazy.

Three minutes into the dump, lightning hit the right side of the nose radome. We secured the dumps, and the lead flight engineer got in the center seat to finish up the flight. An inspection revealed no damage from the strike.

After picking up light icing, we got clearance to 12,000 feet to get below the freezing level of 14,000 feet. At 12,000 feet, we were relieved to see the coastline just northeast of Jacksonville.

We completed dumping and discussed procedures for landing with three engines. Jacksonville Metro reported that NAS Cecil

Field and NAS Jacksonville were relatively clear, dry and with gusty winds out of 230. However, a cold front—the same one over the coastline farther north—was rapidly approaching from the west. Cecil was landing runway 18, while Jax was landing runway 27. We discussed how the wind would affect aircraft controllability on the runway, and we talked about going to Cecil if the winds were too stiff. Other diverts seemed too far because of the rapidly approaching weather system.

Going north was obviously out of the question, and the conditions farther south were deteriorating as well. We calculated landing ground-roll distance, and it was obvious that either local runway would be fine. We headed to Jacksonville and would reevaluate once we were in the terminal area.

We were 20 miles out, at 3,000 feet and 180 knots indicated, when my windshield cracked.

We received several let-down assignments and were 20 miles out, at 3,000 feet and 180 knots indicated, when my windshield cracked. We turned off windshield heat and put on our helmets because we couldn't tell which pane was cracked. In accordance with NATOPS, we assumed the worst-case scenario. We talked about copilot waveoff in the event of catastrophic failure of the pilot's windshield.

By now, it was dusk, and a squall line was just west of the city of Jacksonville. The initial reports of dry runways with seven miles of visibility now seemed optimistic. We discussed windshear escape procedures as we got our first good look at the weather in the local area. Cecil and International looked worse than Jax and we decided to accept the adverse wind rather than risk landing in a thunderstorm.

Runway 27 was dry, with winds reported 230 at 10, and gusts to 16 knots. Landing speeds were 152 knots with approach flaps and 137 knots using land flaps. We briefed the possibility of inadvertent pitchlock during reversal, and the copilot was briefed to call out below 135 knots. A long straight-in GCA was just the ticket for ensuring we had covered everything.

After intercepting glidepath, we got a look at the wet runway and realized that a shower must have just passed. We made a land-flap landing on runway centerline at 139 knots.

As I slowly retarded the power levers into reverse, the plane swerved to the left. Despite using full rudder, the aircraft hydroplaned toward the left side of the runway. Using the last correction I could, I advanced the No.1 power lever. After what seemed like an eternity, the aircraft responded to the differential power, and we gradually corrected back to centerline. I went easy on the binders, and we stopped on centerline with approximately 1,500 feet remaining.

After sitting for a minute in silence, we took off our helmets and taxied back to our line.

Several other problems remain open for discussion—such as dumping fuel in hazy conditions and the effects of hydroplaning during asymmetric reversal with adverse winds.

We did learn several important lessons. First and foremost, good aircrew coordination is critical during multiple malfunctions. There simply is not enough time to muddle through poor communication. Second, there is no substitute for a thorough understanding of NATOPS. Our knowledge of NATOPS was tested several times during this flight by delays that complicated the already challenging task of bringing the crew and plane home.

Lt. Garvin flew with VP-45 at the time of this story. He is now the flag lieutenant to COMPATWINGSLANT.

Vertigo? Tell Someone!

CWO2 Tony Alleyne

by Lt. Tim Ericsen

I'VE HAD MANY BOUTS with vertigo, but none like the one during a night recovery in a solid marine layer from 800 to 2,000 feet. After marshaling in front of the ship, I got radar vectors to the final bearing for a Case III recovery. CATCC didn't do me any favors by hooking me to final at four miles while I descended out of 2,000 feet.

Under normal circumstances, I wouldn't have had a problem, but the marine layer combined with a descending turn gave me a good dose of vertigo. I broke out of the clouds at two miles, slightly above the glideslope, and convinced I was in a right turn. Instead of including the word, "Vertigo," with my ball call, I tried to save the approach on my own. I was thankful that the LSOs waved me off. I made a second pass and trapped.

If you're fighting vertigo, 'fess up to someone in your flight or, in this case, the LSO. If the LSO had known about my problem, he could have given me some helpful calls in the groove, such as, "Wings level," or more lineup calls.

More importantly, if you think you are driving into a bad situation because of vertigo, stop. Don't hesitate to take yourself off an approach. In a multi-place aircraft, use your crewmates to help you out. Whatever you do, don't "John Wayne" the approach by yourself.

Lt. Ericsen flies with VFA-27.

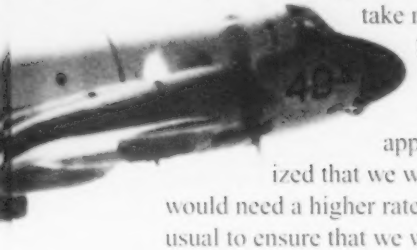
As I scanned my VSI, it jumped from 1,000 to 4,000 fpm; we all felt our seats fall out from under us.

Sneaky Windshea

by Lt. Jim Dvorak

We WERE AN HOUR out of NAS Keflavik in a P-3C Orion on a reposition flight. My copilot was a brand-new third pilot fresh from the FRS. Weather was briefed to be less than VFR but nothing to be overly concerned with as we enjoyed the Northern Lights in the clear night sky.

As we prepared for descent and approach, Reykjavik Approach Control reported weather to be 1,000 feet and overcast, 10 miles visibility with snow showers, and the wind nearly down the runway. I felt comfortable with the weather as I knew the ILS approach available would take me well below the 1,000-foot ceiling.



Reykjavik was vectoring us for the approach when I realized that we were still high and would need a higher rate of descent than usual to ensure that we would be able to intercept the ILS at the right altitude. I told my copilot about my plan.

We intercepted the localizer and turned inbound. I brought the rate of descent back to 1,000 fpm, slightly higher than the normal 700 to 800 fpm, and called for the gear. Five miles from the field, descending through 2,000 feet (about 350 feet above glideslope), it hit us. As I scanned my VSI, it jumped from 1,000 to 4,000 fpm; we all felt our seats fall out from under us.

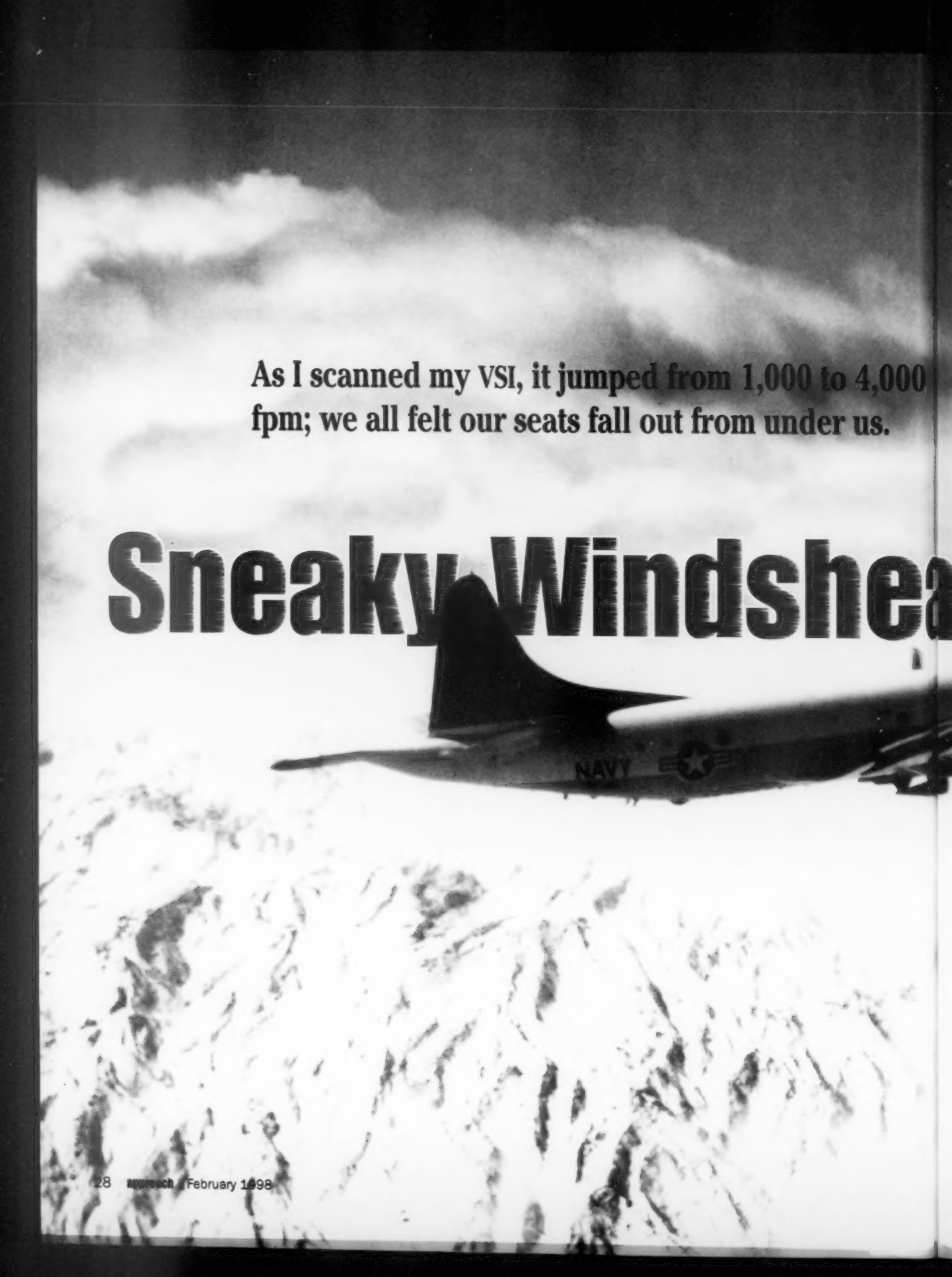
I called for a waveoff, added max power, and requested the gear be retracted as the altimeter scrolled through 1,200 feet and the glideslope indicator showed us well below glideslope. We recovered at 1,000 feet and began climbing when my TACCO reported seeing wind readings indicating the possibility of windshear.

We were quickly approaching 190 KIAS when I again called for gear retraction, including the flaps, as we had ample airspeed and were climbing. Leveling off at 3,000 feet and still IFR with moderate turbulence and icing, the copilot said we had an unsafe gear-up indication for the port mainmount. He quickly requested vectors for holding so we could all catch our breath and discuss what had just occurred.

Entering holding, we broke out of the clouds and into clear weather. My flight engineer looked in the NATOPS manual to work on getting a safe gear-down indication. It did not take long to achieve this but there was still some doubt about the integrity of the tires. We weren't sure if the main doors hadn't closed on the tires. They hadn't. We discussed our options and decided to declare an emergency because of this uncertainty. Approach control vectored us for another ILS approach, and this time, we could see the field from 15 miles out on the localizer course. We landed, glad to be on deck.

In the VP community, they say the real learning begins after qualifying as plane commander. I learned a lot about weather that night and will never take it for granted again. In the future, if I find myself in questionable weather, I'll give the local metro station a call for a thorough observation instead of depending on tower to recite a weather line to me that could be an hour old. That night, a lack of good information made the difference between a rollercoaster ride through a microburst and waiting 10 minutes to land in VFR weather.

Lt. Dvorak flew with VP-26 at the time of this story. He is now an instructor pilot with VP-30.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Lt. Dvorak flew with VP-26 at the time of this story. He is now an instructor pilot with VP-30.

by Lt. Mike Hall

Pitching Deck Cal

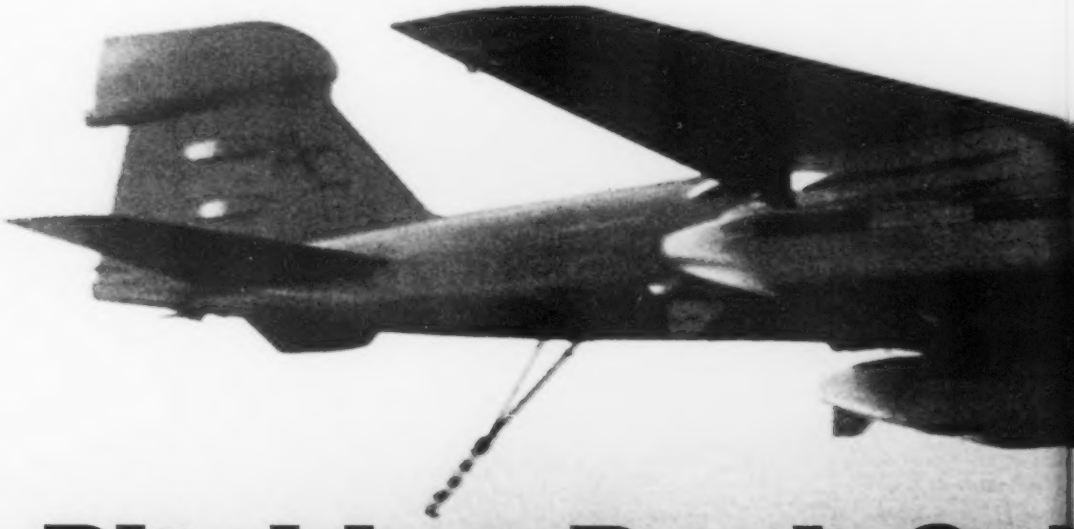
We had been at sea for a week. The deck had been pitching 5 to 10 feet for the past few days, but paddles handled it well, using standard terminology. As we returned from a night AIC mission, skies were broken to overcast, and although there was no moon, visibility was good above and below the clouds. We pushed on time, and flew a standard CV-1 approach.

Coming down glideslope, I peeked at lineup periodically, and I could see the landing-area lights moving. Inside three-quarters of a mile, the LSOs started making pitching-deck calls, indicating that the lens information was no longer valid.

Somewhere in-close to the ramp, I added too much power and floated over the wires.

"MRT, boards in, rotate," I thought. I heard the reassuring sound of the J-52s winding up at the same time the headset in my helmet abruptly went dead. Total communication failures are rare—just my luck to get one on a bolter and not a trap.

Aviating first, I climbed to 1,200 feet while keying the mike to talk on the ICS. There was no response from any seat. Establishing a comfortable climb rate, I looked across at my rightseater, tapped him, shrugged my shoulders while pointing to my headset, and tried to speak. He gave me a puzzled look and shook his head no. I tried using hand signals to let him know I couldn't hear a thing. He seemed to understand, but just for good measure, I popped off my mask and yelled to him. He nodded,

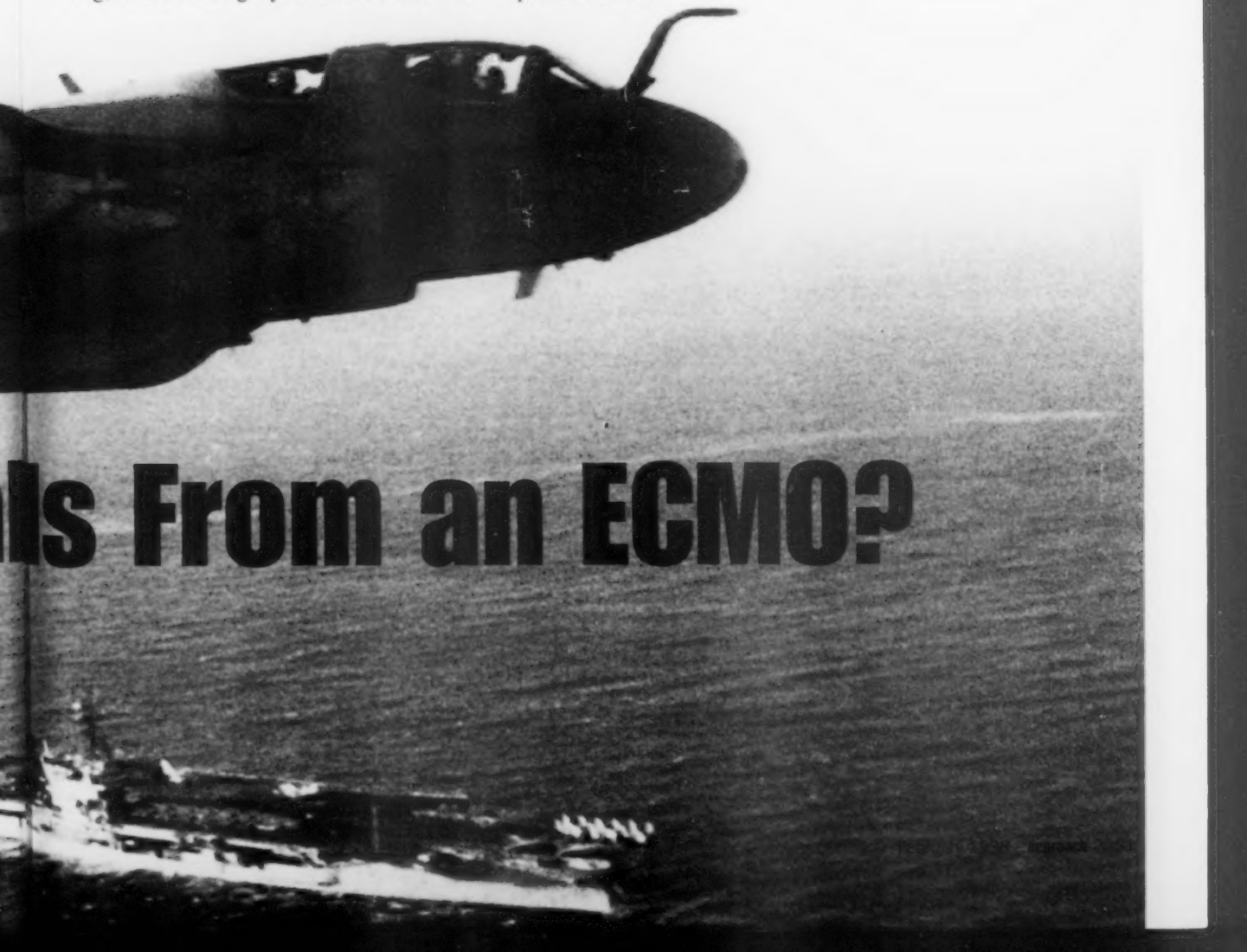


gave a thumbs-up, and appeared to be talking over the radio or ICS.

As we kept climbing, I checked every communication connection I could think of. All my cords were connected, and the switches were all in the right places. This was definitely not something I had experienced before. When you have a problem with ICS or the radio, you usually get static in your headset, but in this case, the silence was deafening. The sensation was eerie, and I was glad I was in a multi-crew aircraft and had my ECMO to talk for me. Without him, I would have had a much harder time figuring my interval.

Once level at 1,200 feet, ECMO 1 gave me a hand signal, which I interpreted as turn downwind. Established on the downwind leg, I tried clearing my head to focus on the task at hand. With our masks hanging free, we could yell back and forth to each other. ECMO 1 had already told approach and the LSOs about our situation. All I had to do was fly the bullseye until they locked us up, make sure the needles matched, and fly my best pass. No problem. Although the skies were cloudy and the deck was pitching, the visibility below the overcast was fairly good, and I could see the ship from several miles away, which helped my comfort factor.

At approximately five miles, I got another hand signal and a yell to turn inbound. I slowed to on-speed as the azimuth needle centered up. Somewhere along the way, the ACLS needles locked up, and after checking them against the ILS, I switched the needles to the big gyro and tried to fly the best approach I could.



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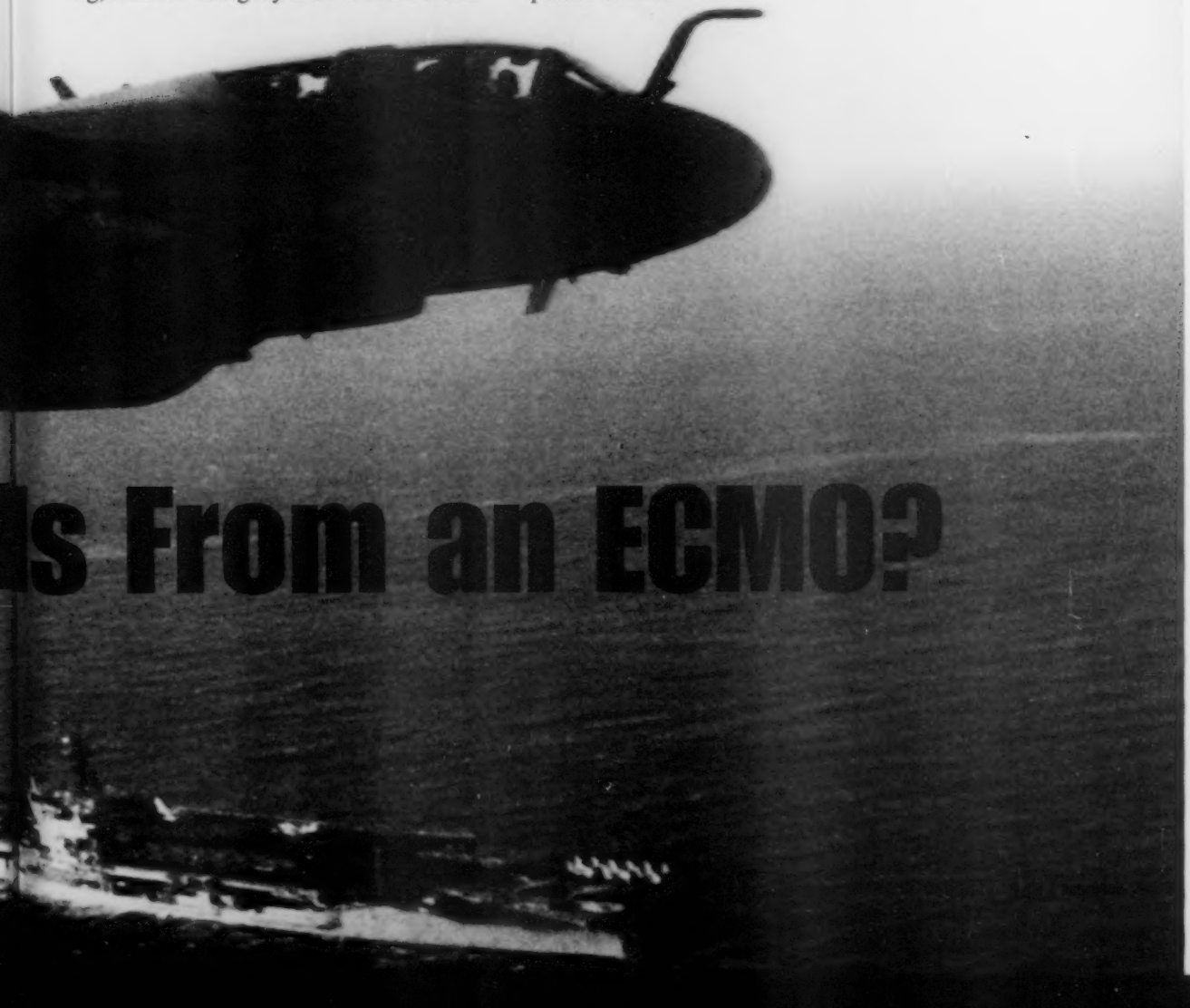

ls From an ECMO?

It was strange to be flying around the ship at night not being able to say or hear a thing. The closest thing I could compare it to is flying alone in the simulator...

Approaching one mile, I started scanning outside. I had a ball on the lens, and it looked close to centered at that distance. I came back inside to the needles for a few more seconds, transitioned to eyes out of the cockpit, and that's where the fun began.

I saw the flight-deck lights cycle down as the ball rose above the datums.

"The deck's down. You're a little high!" yelled ECMO 1 over the background noise in the cockpit. I didn't expect that call. Did he hear that from the LSOs, or was he guessing? He wouldn't make that call on his own, I correctly surmised. He had to be relaying the calls. I pulled a little power, and the ball began to slowly come back down as I saw the deck-edge lights changing aspect.

"Deck's coming up. You're on glideslope," was the call from the right seat as I added power to catch it.

At this point, I began to wonder about the timeliness of the calls I was getting. First, the LSO had to see where the deck was and predict where it was going. Then, he had to process that information through to where he keyed the mike to make the call to the airplane. ECMO 1 received this, then went through the same process to transmit the information to me. I took the inputs from there and calculated what the response should be and reacted. But would my reaction be timely? Would it be the right correction? I wouldn't be able to hear any power calls from the LSOs. All this went through my mind as the end of pass number two approached.

I overcorrected the low I saw as the deck came up to meet me. I helplessly watched another atomic sunrise on the lens and experienced again that sickening, slippery sensation you get when the hook doesn't grab and the deck rushes by in a blur.

It was strange to be flying around the ship at night not being able to say or hear a thing. The closest thing I could compare it to is flying alone in the simulator, shooting practice needles approaches to the ship.

"That's easy enough," I told myself, "I've done that many times." I just had to shift my mind away from the fact that I was in a near-emergency situation, and fool myself into thinking that this was just another needles trainer with no one at the console. The comforting difference was knowing that, although I couldn't hear them, the LSOs would get rid of me with the waveoff lights if things went bad. All it took was a change of attitude to calm me down.

I began to relax. It was actually kind of pleasant not having to listen to all the normal radio chatter. We still had plenty of fuel, the weather was terrible, and ECMO 1 was handling all the comms. All I had to do was settle down and fly the airplane. The fact that there were much fewer distractions helped the situation.

On the final pass, ECMO 1 wisely dispensed with the pitching-deck calls. We trapped on the next pass.

Solid crew coordination, standardization, and reliance on fundamental aviation skills are essential in any emergency.

Lt. Hall flies with VAQ-141.

LESSONS LEARNED

There are two ways to get smart. One is through experience – we call this "the hard way." The other is to learn through others' experiences. The second method is much easier on our machines and bodies.

Fencing With the KC-10

by LCdr. Lynn Tawney

DURING IN-FLIGHT REFUELING with a KC-10, the tanker's hose- response system failed, causing the refueling hose to slacken. The receiver pilot immediately retarded throttles to idle to disengage. A sine wave quickly developed in the refueling hose, resulting in three violent waves hitting the aircraft within five seconds.

The hose severed, leaving the drogue and part of the hose hanging from the aircraft's refueling probe. These components cracked the windscreen as they slapped against the aircraft, and the pilot was forced to divert.

This is a familiar scenario in the TACAIR community and may indicate further design improvements are needed on the KC-10 inflight refueling system. For now, pilot technique remains the number one factor for successful tanking operations.

The KC-10 uses the same refueling equipment as the KC-130, the FR300 hose reel, which was designed for a maximum of 250 knots. The system was not designed to operate in the 300-knot regime of the KC-10, which is why FA-18 refueling is limited to 280 knots. Also, the hose contacts the fuselage as it leaves the tanker. This impairs the hose-reel's capability to sense when the probe engages the basket, to respond to aircraft movement, and to adjust hose length as necessary.

Failure of the system causes sine waves that move from the basket to the drum and back to the receiver aircraft within seconds, damaging the refueling hose and receiver aircraft.

Lessons Learned:

1. The KC-10 centerline drogue is designed for closure rates of 2 to 3 knots. Closure rates approaching 5 knots will almost certainly produce a sine wave and whipping action.
2. Lunging, chasing the basket, or aggressive maneuvering during engagement may exceed the capabilities of the KC-10 hose-reel.
3. Your best indication of system status is the amber signal light, indicating the drogue refueling system is working. Get clear of the hose in the case of a steady or flashing red signal light, which indicates a system malfunction.
4. KC-10 refueling above 280 knots will greatly increase the risk of hose-reel response failure.

LCdr. Tawney is an FA-18 analyst in the Aircraft Operations Division, Naval Safety Center.